

## ABSTRACT OF THE DISCLOSURE

An electrochemical test device is provided for determining the presence or concentration of an analyte in an aqueous fluid sample. The electrochemical test device includes a working electrode and a counter electrode made of an amorphous semiconductor material. The working electrode is overlaid with a reagent capable of reacting with an analyte to produce a measurable change in potential which can be correlated to the concentration of the analyte in the fluid sample. The test device optionally contains a reference electrode made of an amorphous semiconductor material having a reference material on the reference electrode. The test device electrodes can be constructed on a flexible film substrate, such as a polymeric film or a metal foil coated with a non-conductive coating.

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